

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the above-referenced application.

Listing of Claims:

Claims 1-26 (Cancelled)

27. (Currently amended) A ball transfer system, comprising:

a ball arraying apparatus for arraying conductive balls in an array of recesses formed in a ~~pallet~~ first substrate in the presence of electrolyte, said array of recesses being laid on a pattern identical with a pattern of conductive pads formed on a second substrate, and

a ball transfer apparatus for transferring said conductive balls from said recesses on said first substrate to said array of pads on said second substrate.

28. (Currently amended) The ball transfer system as set forth in claim 27, ~~in which~~ wherein said ball arraying apparatus includes:

a bath filled with said electrolyte,

a ~~pallet~~ substrate conveying unit dipping said ~~pallet~~ first substrate in said electrolyte, inclining said ~~pallet~~ first substrate in said electrolyte and moving said ~~pallet~~ first substrate from said bath to said ball transfer apparatus, and

a ball feeder provided over said bath and feeding said conductive balls onto said ~~pallet~~ first substrate.

29. (Currently amended) The ball transfer system as set forth in claim 27, ~~in which~~ wherein said

ball arraying apparatus includes:

a bath filled with said electrolyte and driven for rotation,

a ~~pallet~~ substrate conveying unit dipping said ~~pallet~~ first substrate in said electrolyte and moving said ~~pallet~~ first substrate from said bath to said ball transfer apparatus, and

a ball feeder provided over said bath and feeding said conductive balls onto said ~~pallet~~ first substrate while said bath is being driven for rotation.

30. (Currently amended) The ball transfer system as set forth in claim 27, ~~in which~~ wherein said

ball arraying apparatus includes:

a ~~pallet~~ substrate table retaining said ~~pallet~~ first substrate and changed between a horizontal position and an inclined position,

a ~~pallet~~ substrate conveying unit moving said ~~pallet~~ first substrate onto said ~~pallet~~ substrate table and from said ~~pallet~~ substrate table to said ball transfer apparatus, and

a feeder supplying said conductive balls and said electrolyte onto said ~~pallet~~ first substrate on said ~~pallet~~ substrate table in said inclined position.

31. (Currently amended) A ball arraying apparatus, comprising:

a ~~pallet~~ substrate formed with plural recesses laid on a pattern of an array of conductive pads on a target plate, open to a surface thereof and receiving conductive bumps, respectively,

a means for supplying electrolyte to said ~~pallet~~ substrate so that said electrolyte flows over said surface, and

a means for supplying said conductive balls onto said surface so that said conductive balls are moved on said surface together with said electrolyte.

32. (Currently amended) The ball arraying apparatus as set forth in claim 31, ~~in which~~ wherein said ~~pallet~~ substrate is further formed with a drain passage connected to said recesses for flowing out said liquid after said conductive bumps are received in said plural recesses, respectively.

33. (Currently amended) The ball arraying apparatus as set forth in claim 32, ~~in which~~ wherein said drain passage has a hollow space and plural drain holes respectively associated with said plural recesses and connected between said hollow space and the associated recesses.

34. (Currently amended) The ball arraying apparatus as set forth in claim 33, ~~in which~~ wherein said plural drain holes are offset from said associated recesses, respectively.

35. (Currently amended) The ball arraying apparatus as set forth in claim 31, ~~in which~~ wherein said ~~pallet~~ substrate is further formed with holes offset from said recesses so as to permit said electrolyte to flow out therethrough.
36. (Currently amended) The ball arraying apparatus as set forth in claim 35, ~~in which~~ wherein said ~~pallet~~ substrate includes a first plate formed with said recesses and a second plate formed with said holes and fixed to said first plate.
37. (Currently amended) The ball arraying apparatus as set forth in claim 36, ~~in which~~ wherein said first plate is fixed to said second plate through a diffusion bonding.
38. (New) The ball arraying apparatus as set forth in claim 31, wherein said substrate is one of a wafer and a pallet.
39. (New) The ball arraying system as set forth in claim 27, wherein said first substrate is one of a wafer and a pallet.

40. (New) A ball transfer system, comprising:

a ball arraying apparatus that arrays conductive balls in an array of recesses formed in a first substrate in the presence of electrolyte, said array of recesses being laid on a pattern substantially identical with a pattern of conductive pads formed on a second substrate;

a ball transfer apparatus that transfers said conductive balls from said recesses on said first substrate to said array of pads on said second substrate; and

a substrate conveying unit that dips said first substrate in said electrolyte, inclines said first substrate in said electrolyte and moves said first substrate from said bath to said ball transfer apparatus.

41. (New) The ball arraying system as set forth in claim 41, wherein said first substrate includes an array of drain holes associated with said array of recesses, said array of drain holes being offset from said array of recesses.

42. (New) The ball arraying system as set forth in claim 41, wherein said first substrate is one of a wafer and a pallet.

43. (New) A ball arraying apparatus, comprising:

a substrate having an array of recesses therein corresponding to a pattern of an array of conductive pads on a target substrate;

a means for supplying electrolyte to said substrate so that said electrolyte flows over said substrate; and

a means for supplying said conductive balls into said array of recesses so that said conductive balls are moved on said substrate together with said electrolyte;

wherein said substrate includes an array of drain holes associated with said array of recesses, said array of drain holes being offset from said array of recesses.

44. (New) The ball arraying apparatus as set forth in claim 23, wherein said substrate is one of a wafer and a pallet.